



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/939,983      | 08/27/2001  | Yuji Yamauchi        | 424P050             | 4160             |

7590 05/30/2003

Kevin S. Lemack  
Nields & Lemack  
176 E. Main Street  
Westboro, MA 01581

[REDACTED] EXAMINER

DEL SOLE, JOSEPH S

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

1722

DATE MAILED: 05/30/2003 Z

Please find below and/or attached an Office communication concerning this application or proceeding.

47

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 09/939,983             | YAMAUCHI ET AL.     |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Joseph S. Del Sole     | 1722                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.

2a) This action is FINAL.                  2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-11 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because a) the abstract is currently 2 paragraphs but must be amended to be just a single paragraph. Correction is required.

See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: a) "an effect of capable of" in line 20 of page 9 is grammatically incorrect.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 1 and 9 are objected to because of the following informalities: a) "provided to respectives of" in line 2 of claim 1 is grammatically unclear since "respectives" is not a noun; b) "provided at other of the upper" at line 8 of claim 9 should be changed to --provided at the other of the upper--. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mueller et al (5,993,189).

Mueller et al teach a movable vacuum forming apparatus having a pair of frames (Fig 2, #19 and #23) provided to respectives of upper and lower press plates of a press apparatus via seals (Fig 1) for surrounding a predetermined space; an interpenetrated portion (Fig 2, part of #23) provided at one of the frames and capable of being interpenetrated into other of the frames movably in an up and down direction; a seal apparatus (Fig 3, #25) for slidably sealing an interval between the interpenetrated portion and the other of the frames; a sucking apparatus (col 3, lines 8-13) for bringing a space surrounded by the interpenetrated portion and the other of the frames under a negative pressure; the seal apparatus seals the interval by compensating for a strain of the interpenetrated portion caused by the negative pressure of the space (col 3, lines 26-34); the seal apparatus is a packing mounted to the interpenetrated portion for being into sliding contact with an inner periphery of the other of the frames and includes a lip having a size in correspondence with the strain of the interpenetrated portion; the seal apparatus is a packing mounted to the other of the frames and brought into sliding contact with an outer periphery of the interpenetrated portion and includes a lip having a

FP

size in correspondence with the strain of the interpenetrated portion (Fig 2, both frames have an interpenetrated portion); and a connecting piece (Fig 2, #18) for connecting the pair of frames movably in the up and down direction by a predetermined length to thereby integrate the pair of frames.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 5, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al (5,993,189) in view of Hudkins et al (6,099,771).

Mueller et al teach the apparatus as discussed above including the frame having an interpenetrated portion having an uninterpenetrated portion (Fig 2, #23, the portion sealingly connected to the press) which is not interpenetrated into one of the frames.

Mueller et al fail to teach the suction apparatus vacuums the surrounded space via the uninterpenetrated portion; a base provided at a lower press plate via a seal and having an interpenetrated portion capable of being interpenetrated to the one frame movably in an up and down direction.

Hudkins et al teach a base (Fig 6, #34) provided at a lower press plate (Fig 6, #122) via a seal (the pressure acting between the two keeping the two together is a seal; Mueller et al also teaches a seal between a frame (which the base of Hudkins is replacing) and a plate) and having an interpenetrated portion (Fig 6) capable of being interpenetrated; and an uninterpenetrated portion (Fig 6, the portion through which #56 extends) which is not interpenetrated into the one of the frames and the suction apparatus vacuums the surrounded space via the uninterpenetrated portion (Fig 6, #56) for the purpose of vacuum molding complex, multi-section configurations.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Mueller et al with the suction apparatus for vacuuming the surrounded space via the uninterpenetrated portion and a

base upon the press plate replacing a frame as taught by Hudkins et al because it reduces the number of components comprising the apparatus thereby reducing complexity and cost while enabling the molding of complex, multi-section configurations.

11. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al (5,993,189) in view of Cassani (6,305,925).

Mueller et al teach the apparatus as discussed above including the frame having an interpenetrated portion having an uninterpenetrated portion (Fig 2, #23), the portion sealing connected to the press) which is no interpenetrated into one of the frames.

Mueller et al fail to teach a base provided at a lower press plate via a seal and having an interpenetrated portion capable of being interpenetrated to the one frame movably in an up and down direction and the base having a pressure balance hole for communicating the surrounded space and the space formed between the base and the lower press plate.

Cassani teaches a base (Fig 1, #53) provided at a lower press plate (Fig 1, #5) via a seal (Fig 1, #54) and having an interpenetrated portion capable of being interpenetrated (Fig 2); and the base includes a pressure balance hole for communicating the surrounded space and the space formed between the base and the lower press plate (Fig 1, #53 is porous) for the purpose of controlling the pressure applied during molding (col 3, lines 25-35).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Mueller et al with a base upon the press plate replacing a frame and a pressure balance hole for communicating the

surrounded space and the space formed between the base and the lower press plate as taught by Cassani because it enables controlling the pressure applied during molding.

12. Claim 6-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al (5,993,189) in view of Schubart (4,128,375).

Mueller et al teach the apparatus as discussed above including the frame having an interpenetrated portion having an uninterpenetrated portion (Fig 2, #23), the portion sealing connected to the press) which is no interpenetrated into one of the frames.

Mueller et al fail to teach a base provided at a lower press plate via a seal and having an interpenetrated portion capable of being interpenetrated to the one frame movably in an up and down direction and a hole provided at one of the frames and connected to the suction apparatus; a first notched groove formed at an upper face of the one of the frames and communicated with the hole; and a second notched groove formed at an upper face of the interpenetrated portion and communicated with the first notched groove, wherein the suction apparatus vacuums the surrounded space via the first notched groove and the second notched groove.

Shubart teaches a base (Fig 3, #2) provided at a lower press plate (Fig 3, #1) via a seal and having an interpenetrated portion capable of being interpenetrated (Fig 5); and a first notched groove (Fig 5, #3) formed at an upper face of the one of the frames and communicated with the hole and a second notched groove (Fig 5, #6) formed at an upper face of the interpenetrated portion and communicated with the first notched groove, wherein the suction apparatus vacuums the surrounded space via the first

notched groove and the second notched groove (col 4, lines 20-30) for the purpose of removing a substantial amount of air from the cavity (col 4, line 67 - col 5, line 4).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Mueller et al with the suction apparatus for vacuuming the surrounded space via first and second notched grooves and a base upon the press plate replacing the frame as taught by Shubart because it reduces the number of components comprising the apparatus thereby reducing complexity and cost and enables removing a substantial amount of air from the cavity.

#### ***References of Interest***

13. Miyashita et al (5,496,433) is cited of interest to show the state of the art.

#### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (703) 308-6295. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non-after finals and (703) 872-9311 for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Joseph S. Del Sole*  
J.S.D.  
May 22, 2003



ROBERT DAVIS  
PRIMARY EXAMINER  
GROUP 1300-1722

*5/29/03*